CHONGQING JINGHONG V&T TECHNOLOGY CO.,LTD.

D3-B Series CMTS

JH-HE3416B

DOCSIS 3.0

CE

RoHS

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JingHong specializes in telecommunications Triple Play(telecom, broadcasting TV and Internet) R&D for hardware, software and solutions. JH series CMTS (Cable Modem Termination System) devices has been the leading products in bidirectionally re-engineering SARFT 's (State Administration of Radio, Film, and Television) HFC network transformation since 1999.

With the success promotion in European market in 2007, now JingHong's CMTS products are serving networks in over 40 countries.
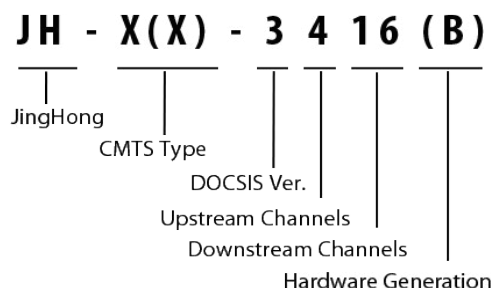
Ver. 1.3

Type General

HE-3416B is a compact 19inch 1U sized chassis CMTS of D3-B Series with broad bandwidth and full Qos performance, it is the ideal CMTS-CM solution for small broadband coverage rate, but bandwidth and latency sensitive services like IPTV, VOD, etc.

HE-3416B is easy to install, simple to configure and cost-effective.

About D3-B Series

D3-B series CMTS is the upgraded version of JingHong's 3rd generation CMTS (Cable Modem Termination System) devices. Based on DOCSIS3.0 and C-DOCSIS, D3-B comprises types of rack mount (HE-3416B), outdoor (F-3416B), D-node (DN-3416B), high-density (CK-3416B), The full series is compliant with DOCSIS3.0/2.0 devices: cable modem, set top boxes (STB) and eMTA.

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JH - X(X) - 3 4 16 (B)
 |     |     |  |  |   |
JingHong  |  |  |  |   |
       CMTS Type |  |  |   |
          DOCSIS Ver. |  |   |
         Upstream Channels |   |
        Downstream Channels    |
              Hardware Generation
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D3-B Series Labelling Rule

2 main improvements of D3-B on hardware are made compared to original D3 Series:
4-core Broadcom network processor and DDR3 Memory adoption;
Optimized power supply management.

The improvements has significantly increased data transmission capacity, lowered power consumption.

Product Appearance

HE-3416B

Feature Highlights

Massive throughput:

- Max. 500 simultaneous subscribers supported;
- 16 QAM channels for DS (downstream) enable 1Gbps Max. data transmission rate;
- 4 QPSK/QAM channels for US (upstream) enable Max.160Mbps transmission rate.

Full functions:

- With layer 3 routing function, static routing, policy routing, VLAN, L2VPN, ACL;
- QoS support, built-in DHCP/TFTP server, DHCP relay;
- IPV6, multicast, Remote-query, etc supported.

Flexible configuration:

- 16 DS channels bonding up can be switched ON/OFF, or configured to 64/256/1024QAM modulation, 4 US channels bonding up can be configured to QPSK, 3~8 grade QAM modulation;
- Load balancing based on CM quantity (Static) or real-time traffic (Dynamic) for both US and DS, ensure efficient use of bandwidth;
- Auto retrieve config profile simplifies batch deployment.
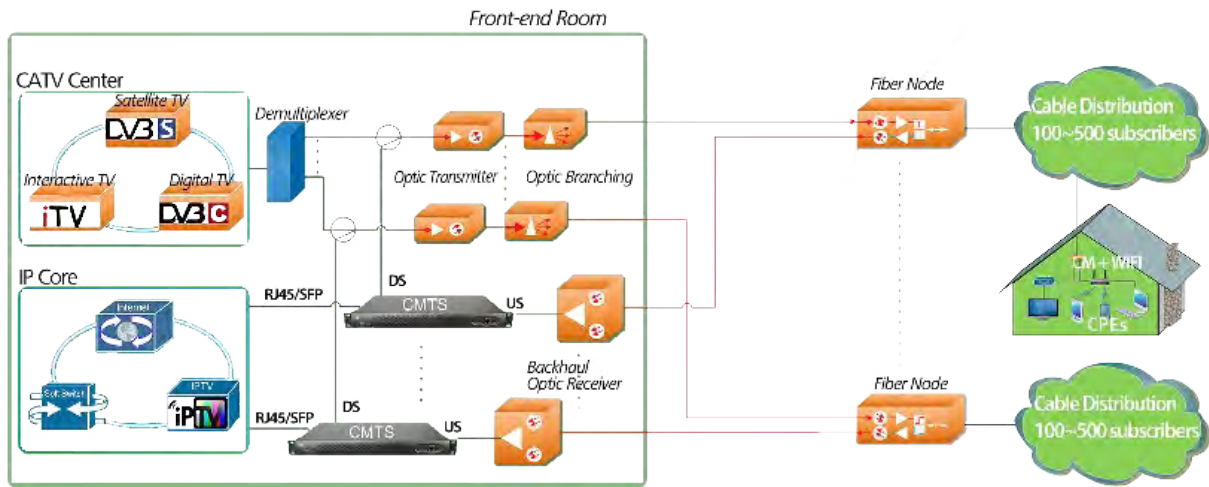
Network Security:

- Option 82/60;
- Multi transmission production of BPI+, CM identification, anti-DOS attack , user isolation and IP source checking.

Convenient management:

- D3-B can be easily configured by:

CLI (Command Line Interface) after log in via telnet;

Remote login embedded web interface NMS (Network Management System);

SNMP protocol based third-party NMS.

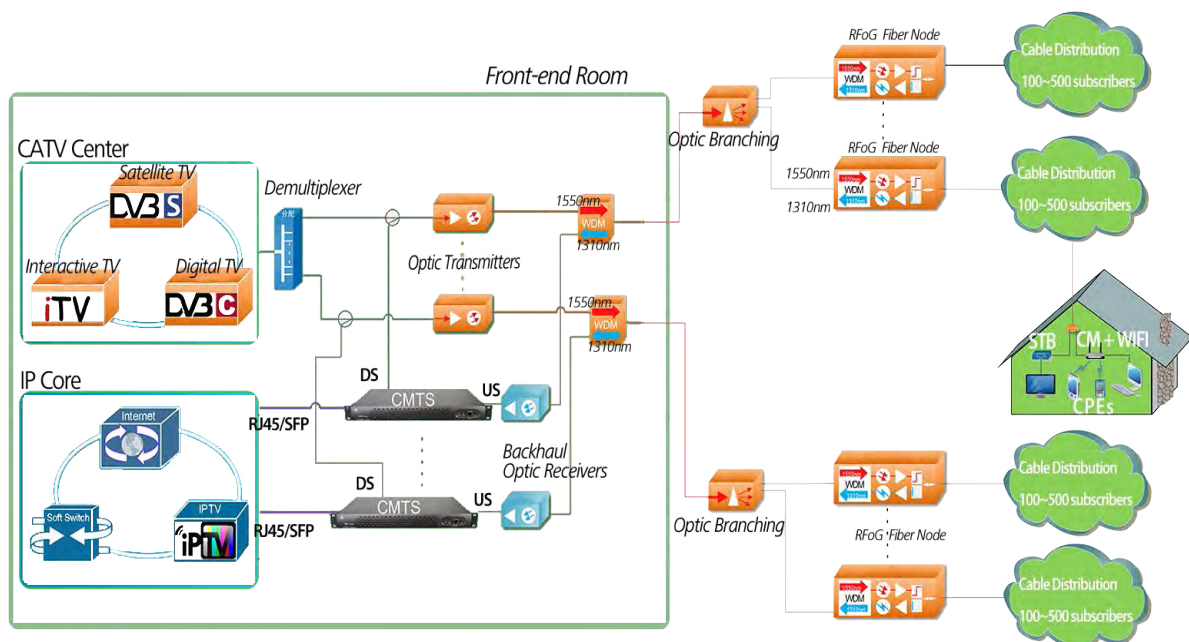- Spectrum analyze available on web management and NMS.

Typical Application
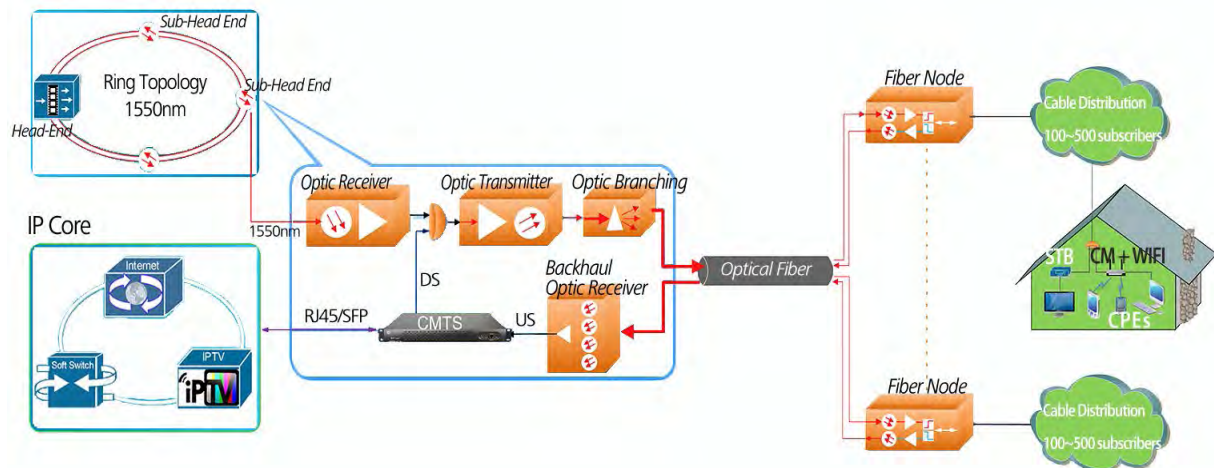
Deployed at head-end room:

- Only 1 HE-3416B CMTS required for 1 optical transmitter's coverage, multiplex downstream channels;
- Superior coverage of 1000~2000 subscribers for each HE-3416B;
- Increase bandwidth by adding CMTS.

Deployed at the head-end, extend fiber backhaul via RFoG optical node:

- Zero redundant fiber for 1500 optical fiber transmission;
- Only single-core optical fiber required for RFoG node downstream and upstream;
- Greatly reduced the "funnel effect" noise;
- CMTS US use mixed input port, simplifies the structure.

Deployed at the sub-head end room:

- Suitable for HFC system with second optical transmission;
- Downstream Channel multiplexing from different rooms.

Technical Specification

Model			JH-HE-3416B			
	Downstream		Upstream			
	Euro- DOCSIS	DOCSIS	ATDMA/TDMA/S-CDMA			
Modulation Mode	64QAM/256QAM/1024QAM		256QAM/128QAM64QAM/32QAM/16QAM/8QAM/QPSK			
Frequency Range (MHz)	112~1002	91~1002	5~65			
Single channel bandwidth (MHz)	8	6	Single channel bandwidth (MHz)	6.4	3.2	1.6
Binding channel quantity	16		4			
Max.total data bandwidth (Mbps)	1000	858	160			
Single channel data rate (Mbps)	64QAM	41.7	30.3	Single channel data rate (Mbps)	256QAM	40.96	20.48	10.24
					128QAM	35.84	17.92	8.96
	256QAM	55.6	42.9		64QAM	30.72	15.36	7.68
					32QAM	25.60	12.80	6.40
	1024QAM*	69.5	53.6		16QAM	20.48	10.24	5.12
					8QAM	15.36	7.68	3.84
Single channel baud rate (Msymps)	64QAM	6.952	5.056941		QPSK	10.24	5.12	2.56
	256QAM	6.952	5.360537	Single channel baud rate (Msymps)		5.12	2.56	1.28
	1024QAM*	6.952	5.360537					
Output level (dBmV)	10~48 adjustable		Input level (dBmV)	-13~+23		
RF port	1 F type socket (imperial)					
Return loss (dB)	> 12		> 14			
Output impedance (Ω)	75		Input impedance (Ω)	75		
WAN Port	optical port	1.25G SFP x1	DS data rate	1Gbps		
	electrical port	1000/100/10Base-T	Serial ports(Console)	RJ45 x1		
Input voltage	AC100~240V,50/60Hz		Consumed power	< 40W		
Status display	LED		Failure warning	LED flashing		
Cooling	40mm fan x2		Working conditions	Temperature: 0~40℃;		
Net weight (Kg)	2.5		Dimensions (mm)	430 x 44 x 285		